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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/631,848 | 08/01/2003 | Ju-Seon Goo | 9862-000014/US | 1042 |
| 30593 | 7590 | 05/16/2006 | EXAMINER | |
| HARNESS, DICKEY & PIERCE, P.L.C. | | | EVERHART, CARIDAD | |
| P.O. BOX 8910 | | | ART UNIT | PAPER NUMBER |
| RESTON, VA 20195 | | | 2891 | |

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|--|-----------------------------------|--|
| Office Action Summary | Application No. 10/631,848 | Applicant(s) GOO ET AL. | |
| | Examiner Caridad M. Everhart | Art Unit 2891 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 2-4, 10-16, 21-27, 29, 36-39, 41-46 and 48-51 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8, 9, 17-20, 28, 31-33, 35, 40 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

The drawings filed 8-10-2003 are acceptable.

Response to Arguments

Applicant's arguments with respect to claims 2-4, 10-16, 21-27, 29, 36-39, 41-46, 48-51 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuo et al (US 6,083,860).

Matsuo et al discloses the formation of an oxide coating from polysilazane on a semiconductor substrate(col. 2, lines 9-10) and col. 4, lines 25-26). This is carried out at low temperature(col. 1, lines 65-67 and col. 2, lines 1-2). The solution is applied by spin coating (col. 18, lines 52-55). The coated is heated at low temperature at a temperature of 150(col. 16, lines 25-30). Then the layer is exposed to an oxidizing solution(col. 16, lines 34-40). This is carried out by immersion, which is dipping(col. 16, lines 34-40). A catalyst such as nitric acid or sulfuric acid is included in the oxidizing solution(col. 12, lines 5-7). The oxidant is dissolved in a solvent(col. 12, lines 15-17). The solvent for the polysilazane may be xylene(col. 16, lines 14-20). There is a heating step at 400 degrees C, which is within the range recited in claim 13(col. 2, lines 60-63).

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The exposure to water may be in the form of vapor, which is steam(col. 2,lines 20-23).

The polysilazane is dissolved I solvents which include the recited solvents(col. 8, lines 9-15, 29-47, and 50-53).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7,10-16,21-27,29,30,36-39, 41-46,48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo, et al as applied to claim 2 above.

Matsuo et al is silent with respect to the concentrations and the bake times recited in the claims and aluminum lines.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the recited concentrations and times for bake because the concentrations and times are variables of the art which one of ordinary skill in the art would have been able to determine.

It would have been obvious to one of ordinary skill in the art at the time of the invention that aluminum lines are encompassed by the disclosure made by Matsuo et al because Matsuo et al discloses the coatings are formed on semiconductor substrates with electronic parts and wiring thereon(col. 2,lines 1-10), and aluminum wiring is conventional in the art.

Allowable Subject Matter

Claim34-35 are allowed.

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Claims 5, 6, 8, 9, 17-20, 28,31-33, ~~36~~,40,and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 571-272-1892. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CARIDAD EVERHART
PRIMARY EXAMINER

C. Everhart
5-14-2006